University of Connecticut
School of Engineering

Office of the Dean

Judiciary Committee

Thursday, March 19, 2009

Testimony of Dean Mun Y. Choi, Dean of Engineering, University of Connecticut

S.B. No. 1127: An Act Concerning the Applicability of Certain State Contracting Nondiscrimination Requirements

Committee Co-chairs: Sen. Andrew J. McDonald and Rep. Michael P. Lawlor
Vice Chairs: Sen. Mary Ann Handley and Rep. Gerald M. Fox
Members

Background: The importance of software packages to the mission of any college or university – including the University of Connecticut – cannot be overstated. In fact, I would argue that software underpins nearly every aspect of the modern academic environment and is, as such, the soft Achilles heel of contemporary life. Software is:

- Critical to classroom laboratories, where students learn to transform theory into practice;
- Vital to ongoing classroom instruction (for analysis, characterization, quantification, design, data collection and interpretation, perform massive computing calculations, etc.);
- Invaluable to our students' required in-class and special projects; and
- Inseparable from ongoing research efforts of our faculty and students.

Software packages are also heavily integrated into the very functioning of the University as an organization, allowing the institution to conduct all facets of business:

- Maintain student records, from the time they apply to college until they graduate – and beyond;
- Maintain accounts payable/receivable and transfer funds;
- Maintain payroll and other HR records;
- Communicate within and outside of the academic setting;
- Maintain inventories of equipment and other holdings;
- Submit and track orders with vendors;
- Maintain the heating, cooling, water supplies and energy of the entire campus infrastructure;
- Maintain the information technology function; and
- Countless other day-to-day functions.

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Beyond these uses, software is critical to the University's interactions with those beyond the University community. For example:

- Employers – such as UTC, Pratt & Whitney, GE, Electric Boat and IBM, to name a few among thousands – expect our graduates to be well versed in the leading software packages common to their profession. Graduate programs of other universities expect our students to be fully competent in various software packages common to the degree program.
- Many external organizations expect information to be shared in a familiar format.
- Federal agencies, foundations and other funding agents dictate that proposals, reports and study results be submitted in prescribed formats.
- Vendors and suppliers to the University expect that necessary specifications will be provided in familiar formats.

The current restrictions on software contracts are notably, negatively impacting our workforce development; if the current restrictions remain in force, Connecticut industry and the State economy will almost certainly suffer long-term consequences.

The software packages in question are indeed packages that are considered the leaders in their specific application areas.

I refer Committee members and other interested parties to a summary report prepared by the University of Connecticut Purchasing Department titled "**Software and services unlikely to be considered for additional CHRO exemptions**." This report contains many specifics associated with several packages along with details of importance of those packages to ongoing efforts of faculty, staff, and students.

The testimony discussed below pertains primarily to the software packages having significant usage within the School of Engineering.

General University-wide Software Packages: Several software packages are in general use across the University as well as within the School of Engineering. Examples include:

- General Microsoft suite (e.g., Word, Office, Excel, Outlook, etc.)
- Comsol, and
- Mathworks Matlab and others.

Generally, except for Matlab, these packages incur annual charges that ***exceed*** **the $50,000** level included in the Senate bill.

Please remember: these software packages are widely acknowledged as the standards in their application areas – across academia, industry, business and government. The use of alternatives, in fact, sometimes invites concerns – even suspicion.

Besides the arguments in favor of current use and widespread standardization is the argument of transitional difficulty. By this, I mean that transitioning from currently-used

packages to the alternatives would be long, fraught with difficulty, require user retraining, and be potentially risky in terms of *lost data*. Meanwhile, the hard work of our mission – education, research, reporting and day-to-day functioning – would come to a virtual standstill.

The University has invested significant time – sometimes years – in tailoring these packages for specific uses and in integrating them to smoothly align with other software packages in use. To change from these tailored software systems would require that we repeat these prior efforts before the new packages become useful to us and our constituents. More time, more effort would be lost in repetition while the mission was delayed.

It should also be noted that there is no reason to believe these new suppliers would be any more open to State regulations than the current suppliers.

School of Engineering Software Packages: The School of Engineering is a major user of software packages. Among the many on which we rely, several play broad roles in the ongoing efforts of faculty, staff, and students in the school. These include:

- Cadence [Electrical & Computer Engineering]
- Aspen [Chemical Engineering]
- Ansys Fluent [Mechanical Engineering]
- Dassault Abaqus [Civil & Environmental Engineering, Mechanical Engineering]
- UGS [Mechanical Engineering]

These packages are (except for Dassault Abaqus, which enjoys widespread if not ubiquitous use within the engineering community) *the clear choice of the engineering community – if not the sole option*. They have been widely use within the School of Engineering for four years or longer.

Currently, each of these packages has annual costs ***below* the $50,000** level mentioned in the Senate bill.

The previous testimony relative to software package contracts in general, and those noted specifically in university-wide use, remains applicable to the School of Engineering packages as well.

Process: The process for securing contract approval is as follows:

- School of Engineering personnel submit a purchase order request along with the associated detailed information. This often requires that the prospective purchaser, along with Engineering Computing Services personnel, communicate with informed contacts and the vendor organization to seek support for the vendor's approval. Occasionally, outside contacts who may be able to influence the contract negotiation are also called upon to assist in the process. [Engineering personnel have also participated in CHRO exemption requests when they are presented for consideration.]
- School of Engineering personnel supply additional information as needed, and answer questions posed to/by the Purchasing Department or the Attorney General's office.

- The University's Purchasing Department and Office of the Attorney General review requests and approve contracts only after being fully satisfied that the requested software is required and that all paperwork has been completed accurately.

From the first requisition of the software package to the final resolution of contract discussions, the School of Engineering has been heavily involved in all efforts.

It is estimated that in the last **18-30 *months***, School of Engineering personnel have expended the following levels of effort toward securing software approvals:

- 20+% of the Director, Engineering Computer Services' time
- 10+% of the Associate Dean for Academic Affairs' time
- 5-10% of various departmental/program administrative assistants' [or their designees'] time
- 5% of various department heads'/program directors' time
- 5% of the Dean of Engineering's time
- Up to 5% of the software package requestors' time

This time commitment is significant.

Given that the Senate bill under consideration has a $50,000 threshold that would not be exceeded by any of these software packages, the legislation would/should make it far easier for the vendors to comply with the requirements – thereby reducing an enormous burden and allowing us to focus on our pressing obligations as the State's flagship educational institution.

Summary: It bears reiterating that these School of Engineering software packages are clearly the choice of the engineering/industrial community. Their use ensures our students are equipped with the skills required to succeed in their careers, permits us to conduct and maintain basic administrative and infrastructure functions, underpins critical research, and permits the smooth interaction of University personnel with outside groups.

Efforts to switch to alternatives (viewed widely as inferior in capabilities, efficiencies or both; *and* uncertain to be void of contract concerns) would severely hamper productivity during and after the switch and likely reduce effectiveness in the longer term.

The School of Engineering believes the proposed legislation represents a significant improvement in the approach to software contracts. The change in threshold would result in dramatic improvements for our engineering constituents and the University as a whole. Most important, the proposed change would reverse the current, mounting risk to the competitiveness of Connecticut industry and the State economy.

We believe also, however, that the $50,000 threshold in the Senate bill is likely to negatively impact overall University efforts for those software packages whose prices exceed the threshold.